IN THE UNITED STATES DISTRICT COURT
FOR THE WESTERN DISTRICT OF WISCONSIN

UNITED STATES OF AMERICA,

Plaintiff,

v.

MICHAEL R. MORENO and PAUL R. HEIDBREDER,

Defendants.

OPINION & ORDER

15-cr-15-jdp

The defendants, Michael Moreno and Paul Heidbreder, have each pleaded guilty to conspiring to import from China and distribute in the United States a Schedule I controlled substance, Alpha-Pyrrolidinovalerophenone (Alpha-PVP). Alpha-PVP is a newer designer drug, which was designated a Schedule I controlled substance on March 7, 2014. The parties agree that during the charged conspiracy, Alpha-PVP was a Schedule I controlled substance, and they do not dispute the quantities of Alpha-PVP attributed to each defendant.

But defendants object to the calculation of the drug quantity. Defendants contend that Alpha-PVP is most closely analogous to pyrovalerone, a Schedule V controlled substance. They argue that they should be treated under the guidelines as though they were convicted of conspiring to distribute pyrovalerone, which would result in dramatically lower guideline sentence ranges for both of them.

Under the applicable guideline, USSG § 2D1.1, the first step in the drug quantity analysis is to determine whether the drug at issue is listed in the Drug Quantity Table. The Drug Quantity Table, however, addresses only a small number of common controlled substances. When, as in this case, the controlled substance is not in the Drug Quantity Table, the second step is to check the Drug Equivalency Tables, which convert a somewhat larger

number of controlled substances into marijuana equivalent weights for purposes of determining the offense level. But Alpha-PVP is not in the Drug Equivalency Tables either.

Alpha-PVP is a somewhat newly scheduled controlled substance that is not referenced in either the Drug Quantity Table or the Drug Equivalency Tables. Under these circumstances, Application Note 6 requires a third step: determine the base offense level using the marijuana equivalency of "the most closely related controlled substance referenced in this guideline." Application Note 6 also indicates that in determining the most closely related controlled substance, the court must, to the extent practicable, consider three factors:

> (A) Whether the controlled substance not referenced in this guideline has a chemical structure that is substantially similar to a controlled substance referenced in this guideline.
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> (B) Whether the controlled substance not referenced in this guideline has a stimulant, depressant, or hallucinogenic effect on the central nervous system that is substantially similar to the stimulant, depressant, or hallucinogenic effect on the central nervous system of a controlled substance referenced in this guideline.
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> (C) Whether a lesser or greater quantity of the controlled substance not referenced in this guideline is needed to produce a substantially similar effect on the central nervous system as a controlled substance referenced in this guideline.

The court does not have to find that the proposed comparator is the single most closely related controlled substance under each of these three criteria. The objective is to determine which controlled substance, on the whole, in light of these considerations, is the most closely related for purposes of sentencing.[1]

[1] Neither side has asked the court to consider whether factor (C) would allow the court to adjust the marijuana equivalency ratio in light of evidence concerning the potency of the charged controlled substance. In other words, if methcathinone were the most closely related controlled substance in the guideline, but the evidence showed that Alpha-PVP was only half as potent, could the court convert at the rate of 190 grams of marijuana equivalent per gram

In this case, the government indicated to the probation office that it could prove by a preponderance of the evidence that methcathinone was the most closely related controlled substance referenced in the guideline. Methcathinone is a Schedule I controlled substance; under the guideline, one gram of methcathinone is the equivalent of 380 grams of marijuana. The probation office calculated the drug quantity using this equivalency, which ultimately produced a guideline range of 70 to 87 months for each defendant.

Defendants object to the drug quantity calculation.[2] They ask the court to consider Alpha-PVP to be most closely analogous to pyrovalerone, a Schedule V controlled substance. All Schedule V controlled substances are deemed to be the equivalent of .00625 grams of marijuana, and the maximum equivalent weight of a Schedule V controlled substance is 2.49 kilograms of marijuana. Under defendants' view of the drug quantity, Heidbreder would have a guideline range of 6 to 12 months, and Moreno would have a guideline range of 0 to 6 months.

In designer drug cases, the identification of the comparator controlled substance is critically important because the conversion rates vary so greatly. For example, a gram of N-N-dimethylamphetamine is worth 50 grams of marijuana, but a gram of pure methamphetamine is worth 20 kilograms. It would be grotesquely unfair to sentence a defendant who had distributed a new drug that was a mild stimulant as though he had distributed pure methamphetamine. In this case, the court conducted an extended evidentiary hearing to

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of Alpha-PVP? This would be a factor to consider in selecting the ultimate sentence, but it appears to be an open question under the guidelines. *Cf. United States v. Brey*, No. 15-10165, 2015 WL 5521181, at *5 n.5 (11th Cir. Sept. 21, 2015).

[2] Moreno also objects to the two-level enhancement under USSG § 2D1.1(b)(12) for maintaining a premises for the purpose of distributing a controlled substance. This objection is overruled for reasons stated at the sentencing hearing.

consider the drug quantity analysis as part of the sentencing hearing. The court overruled defendants' objection for reasons stated at the hearing. This opinion provides additional reasoning and guidance on this important issue.

Defendants' objection has a fundamental flaw. The guideline does not instruct the court, as defendants ask, to sentence defendants based on the most closely related controlled substance from among the (expanding) universe of controlled substances. Rather, Application Note 6 tells the court to find the most closely related controlled substance from among those *referenced in the guideline*. Pyrovalerone is not listed in either the Drug Quantity Table or the Drug Equivalency Table. Thus, it is irrelevant how closely analogous Alpha-PVP is to pyrovalerone because pyrovalerone is not an available comparator under the guideline.[3]

Defendants' proposal for the drug quantity calculation would be unworkable for two reasons. First, the court would have to determine the most closely related compound from among the nearly 500 controlled substances on the current DEA schedules. In the case of newer drugs without well-established comparators, such as the Alpha-PVP at issue here, the drug quantity analysis would be impossibly complicated. Second, in many cases, defendants' proposal would simply not resolve the issue. For example, if the most closely related controlled substance to Alpha-PVP were MDPV, another cathinone stimulant listed on

[3] Even if the court were not constrained to choose a comparator from among the controlled substances in the guideline, defendants' proposed comparison to a Schedule V controlled substance would be implausible for another reason. Schedule V controlled substances must have a "currently accepted medical use in treatment in the United States." 21 U.S.C. § 812(b)(5). New designer drugs that have not been tested for safety would not have accepted medical uses, making a comparison to Schedule V controlled substances fundamentally incongruent. Out of fairness to criminal defendants, the guideline should offer an appropriate comparator controlled substance. But absent truly extraordinary circumstances, the appropriate comparator for a Schedule I controlled substance would not come from Schedule V.

Schedule I, the guideline would not provide an offense level or a marijuana equivalency because MDPV is also not referred to in the guideline. But under the literal language of the guideline, the search for the appropriate comparator drug is confined to the much smaller number of comparator drugs referred to in the guideline, for which the Sentencing Commission has provided an offense level or a marijuana equivalency.

The court rejected defendants' primary argument that pyrovalerone was an appropriate comparator. This comes close to resolving the issue because methcathinone was the only other potential controlled substance comparator presented to the court. Nevertheless, the court took evidence to determine whether methcathinone was indeed the appropriate comparator under the three-factor framework set out in the guideline.

The first factor concerns the chemical structure of Alpha-PVP. The government presented the expert testimony of Dr. Daniel Willenbring, PhD, a Drug Science Specialist with the DEA. Dr. Willenbring offered reasons why Alpha-PVP was substantially similar in chemical structure to methcathinone. Essentially, Alpha-PVP and methcathinone share the phenethylamine core structure and similar substitutions at certain locations on the core structure. Dr. Willenbring based his conclusions largely on a review of the scientific literature and on his knowledge of chemical structure. He illustrated his testimony with a computer animation to illustrate the three-dimensional structure of the two compounds. He testified that his group of scientists at the DEA had unanimously concluded that, for purposes of the guideline that deals with the drug quantity analysis, Alpha-PVP was structurally most closely related to methcathinone.[4] Dr. Willenbring did not offer any view of whether Alpha-PVP was

[4] Defendants' counsel aggressively cross-examined both DEA witnesses in an attempt to show that they were biased and that their opinions were not well grounded. But the court found their testimony entirely credible, notwithstanding the inherent limitations on the information

substantially similar to pyrovalerone or any other controlled substance not referenced in the guideline.

Defendants countered Dr. Willenbring's testimony with the declarations of Joseph P. Bono, an experienced forensic scientist, and Dr. Nicholas V. Cozzi, PhD, a pharmacologist at the University of Wisconsin. Mr. Bono and Dr. Cozzi had offered declarations on the structure of Alpha-PVP in other cases. Their declarations make a persuasive case that Alpha-PVP is structurally similar to pyrovalerone, and perhaps more closely similar to pyrovalerone than to methcathinone. But their comparison to a controlled substance that is not referred to in the guideline is irrelevant.

Defendants also criticized the concept of "substantially similar" on the grounds that it does not have an accepted meaning among scientists. But the concept has an understandable common-sense meaning, even if it is, to some degree, a question of judgment. The same concept is invoked in the Controlled Substance Analogue Enforcement Act of 1986. 21 U.S.C. § 802(32)(A). In *McFadden v. United States*, 135 S. Ct. 2298, 2305 (2015), the Supreme Court held that a defendant could be convicted under the Analogue Act if he knew that the substance was substantially similar in structure and effect to a controlled substance. *McFadden* held that the concept of "substantial similarity" is not so vague as to render the Analogue Act unconstitutional or unworkable. *Id*. at 2307. The reasoning of *McFadden* would apply with equal or greater force in the context of sentencing: the concept of substantial similarity has a common-sense meaning that an expert, and ultimately the court, can use to

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that was available to them. In particular, Dr. Prioleau acknowledged that she did not have ample evidence concerning the potency of Alpha-PVP, and that she based her conclusions on her interpretation of the drug discrimination evidence available to her.

ensure that the guideline sentence range is reasonably based on a fair appraisal of the nature of the charged controlled substance.

The court finds that Alpha-PVP is substantially similar in chemical structure to methcathinone.

The second factor concerns whether the pharmacological effect of Alpha-PVP is substantially similar to a drug referred to in the guideline. The government presented the testimony of Dr. Cassandra Prioleau, PhD, also a Drug Science Specialist with the DEA. Dr. Prioleau's testimony was based on her review of the scientific literature. She testified that she had reviewed in vitro studies that showed that Alpha-PVP had a stimulant effect, as did methcathinone. She testified that drug discrimination tests in animals showed that Alpha-PVP and methcathinone both substituted for methamphetamine and cocaine, which also demonstrated that both Alpha-PVP and methcathinone had stimulant effects on the central nervous system. Finally, Dr. Prioleau testified that anecdotal evidence from case reports of drug incidents suggested that Alpha-PVP and methcathinone had produced somewhat similar adverse results in humans.

Defendants countered Dr. Prioleau with declarations from Dr. Cozzi, who cited in vitro studies that suggested that Alpha-PVP was less potent than pyrovalerone. Once again, the comparison with pyrovalerone is not directly relevant under the guideline. There is no dispute that Alpha-PVP produces a stimulant effect similar to methcathinone, and the court so finds. But the research reviewed by Dr. Cozzi raises questions about the potency of Alpha-PVP, which relates to the third factor under the guideline.

The third factor requires the court to consider whether it would take a greater or lesser quantity of Alpha-PVP to produce an effect similar to methcathinone. The government

relied, in part, on the testimony of Dr. Prioleau. Dr. Prioleau testified that, in her opinion, based on her view of the drug discrimination tests in rats and on her review of case reports, Alpha-PVP was about as strong as methamphetamine. But Dr. Prioleau conceded that she had limited information on which to base her opinion about the potency of Alpha-PVP.

Defendants cited Dr. Cozzi's opinion that Alpha-PVP is about as potent as pyrovalerone, and less potent than either methamphetamine or methcathinone. Dr. Cozzi cited and relied on a 1967 patent for a family of compounds that includes Alpha-PVP. The patent states that the middle range of the tested average daily dose of the compounds that were tested was 60 milligrams. Using this as a baseline, Dr. Cozzi cited studies of pyrovalerone suggesting that an optimal daily dose of pyrovalerone would be 60 milligrams, and that 60 milligrams of pyrovalerone would be the equivalent of 10 milligrams of amphetamine. But Dr. Cozzi's opinion leaves several questions unanswered. First, the 1967 patent covers a family of related compounds, not just Alpha-PVP. Thus, it is not clear whether the patent really says anything about Alpha-PVP specifically. Second, the patent reports the average tested dose of these compounds, but it does not clearly disclose the results of the testing. The patent suggests that this family of compounds is "anywhere from 10 to 40 times as effective as piperidino ketones of analogous or related structure." U.S. Patent No. 3,314,970, column 6, lines 66-68. Dr. Cozzi does not fully connect these comparisons, and his evidence is not sufficient to make any reliable predictions about the potency of Alpha-PVP relative to methcathinone.

The scant scientific evidence in the record does not show by a preponderance of the evidence how Alpha-PVP compares in potency to methcathinone. But the government also presented the testimony of three witnesses who were extensive users of Alpha-PVP. Each of

these witnesses provided testimony that showed that Alpha-PVP was not a relatively mild stimulant like pyrovalerone. The testimony of the first witness, the already-sentenced co-conspirator Rhonda Jacquinot, was somewhat confused as to the full effects of Alpha-PVP. But her testimony was clear that Alpha-PVP had a powerful stimulant effect. (It was also clear from her testimony, and from the information in her pre-sentence report, that Alpha-PVP had dominated her life and that she had become completely dependent on it.) The final two witnesses were particularly helpful because they had both used methamphetamine, and they testified, credibly, that Alpha-PVP was far more potent than methamphetamine. Based on the testimony of these three government witnesses, the court finds that Alpha-PVP is probably more potent than methamphetamine, and thus it is at least as potent as methcathinone.[5]

The court finds that the government has shown by a preponderance of the evidence that, for purposes of the drug quantity analysis, the most closely related controlled substance to Alpha-PVP is methcathinone. Accordingly, the court converts the drug quantities ascribed to each defendant at the rate of 380 grams of marijuana equivalent for each gram of Alpha-PVP.

ORDER

IT IS ORDERED that defendants' objections to the drug quantity analysis, Dkt. 41

[5] A gram of street methamphetamine converts to 2 kilograms of marijuana equivalent. A gram of methcathinone converts to 380 grams of marijuana equivalent.

and Dkt. 42, are OVERRULED.

Entered October 15, 2015.

BY THE COURT:

/s/

JAMES D. PETERSON
District Judge